

NEVADA DIVISION OF ENVIRONMENTAL PROTECTION

FACT SHEET (Pursuant to NAC 445A.874)

Permittee Name: **Tronox, LLC**
Type of Project: **Remediation**
Project Name: **Tronox Henderson Facility**
Address: **8000 West Lake Mead Drive, Henderson, Nevada**
Permit Action: **UIC Draft Permit Renewal**
Permit Number: **UNEV94218**
Injection Wells (#): **two (2) injection trenches**

Description of Injection

Location: Two injection/ recharge trenches are located at the Tronox Henderson Facility, 8000 West Lake Mead Drive, Henderson, Nevada, 89009

Characteristics: Lake Mead water is gravity fed into two groundwater recharge injection trenches at a monthly average of approximately 100 gallons per minute (gpm). The clean water maintains a hydraulic barrier against a perchlorate-contaminated plume near the north boundary of the Tronox property, and prevents the plume from migrating toward the Las Vegas Wash and into the Colorado River System.

Synopsis:

Tronox, (formerly known as Kerr-McGee Corporation), is located on 450 acres of the Black Mountain Industrial (BMI) complex 13 miles southeast of Las Vegas, in an unincorporated area of Clark County, Nevada. It is surrounded by the City of Henderson.

The BMI complex has been the site of industrial operations since 1942, and was originally sited and operated by the US government as a magnesium production plant in support of World War II. Since the war, the site has been used by various manufacturing operations producing manganese dioxide, sodium chlorate, ammonium perchlorate, boron, boron trichloride, and boron tribromide. Tronox currently produces manganese dioxide, boron trichloride, and elemental boron.

Due to past liquid and solid waste management practices by the industrial operations in the vicinity of the BMI complex, the area's groundwater contains contaminants such as benzene, chromium, total dissolved solids, perchlorate, organophosphates and organo-acids. Beginning in 1981 and continuing until the present time, the site has been the subject of environmental site assessments and remediation activities.

In 1987, remediation of chromium contamination in the groundwater was begun. Remediation consisted of extraction of groundwater, treatment to remove chromium, and

reinjection of treated water into the ground via the two permitted injection trenches in this UIC permit.

In 1997 perchlorate was discovered in the vicinity of Las Vegas Wash, approximately two miles north of the Tronox Henderson facility. Studies revealed the perchlorate was emanating from the north end of the BMI Complex and entering Lake Mead and the Colorado River system. Remediation of perchlorate was subsequently placed on a fast-track by the NDEP for Tronox and other companies operating at the BMI Complex. Companies were required to control the groundwater contaminant plume at their property boundaries. Tronox stopped injecting chromium treated water into the reinjection trenches and began injecting clean Lake Mead water to maintain a hydraulic barrier to the perchlorate plume. Lake Mead water, based on historical data, contains less than 0.02 mg/L of perchlorate. In 1998, the UIC permit was modified to authorize Tronox to inject Lake Mead water into the two injection trenches, and they have continued to do so until the present.

Site assessments and remediation of groundwater are ongoing at the Tronox facility. For a more extensive chronology and discussion of the remediation activities at the Tronox facility and the BMI complex, please refer to fact sheets and other documents at the NDEP's Bureau of Corrective Actions website at <http://ndep.nv.gov/bmi/tronox.htm>.

Receiving Water Characteristics:

The recharge trenches are designed to allow injection by gravity feed. The receiving waters are not potable due to high total dissolved solids and other trace minerals and are not used for private or public water consumption. Depth to groundwater is approximately 30-40 feet. The clean Lake Mead water being injected is of higher quality than the groundwater and therefore is not degrading the water quality.

Procedures for Public Comment

The Notice of the Division's intent to renew a permit authorizing the facility to discharge to groundwater of the State of Nevada was sent to the Las Vegas Review Journal on August 8, 2008. The notice was mailed to interested persons on our mailing list. Anyone wishing to comment on the proposed permit may do so for a period of 30 days following the date of the public notice.

A public hearing on the proposed determination can be requested by the applicant, any affected state, any affected interstate agency, the regional administrator of EPA Region IX or any interested agency, person or group of persons.

Any public hearing determined by the Administrator to be held must be conducted in the geographical area of the proposed discharge or any other area the Administrator determines to be appropriate. All public hearings will be conducted in accordance with NAC 445A.238.

The final determination of the Administrator may be appealed to the State Environmental Commission pursuant to NRS 445.274.

Proposed Determination

The Division has made the tentative determination to renew the proposed permit.

Proposed Effluent Limitations and Special Conditions

See Attachment A of the permit UNEV 94218. Tronox is required to continuously monitor the injection rate of Lake Mead water and the groundwater extraction rate of the chromium treatment system. Injection rate and volume must equal or be less than extraction rate and volume. Quarterly analysis is required of the Lake Mead water for volatile organic compounds (VOCs), total perchlorate, and a Profile 1 Analysis. Groundwater from monitoring wells is analyzed for total and hexavalent chromium, perchlorate, TDS, and groundwater elevation and depth.

Rationale for Permit requirements

The permit conditions will help to ensure that the injectate does not adversely affect the existing water quality or hydrologic regime.

Prepared by Janet Melander
August 7, 2008